POROUS PARTICLES COMPRISING EXCIPIENTS FOR DEEP LUNG DELIVERY

ABSTRACT OF THE DISCLOSURE

Improved porous particles for drug delivery to the pulmonary system, and methods for their synthesis and administration are provided. In a preferred embodiment, the porous particles are made of a biodegradable material and have a mass density less than 0.4 g/cm^3/. The particles may be formed of biodegradable materials such as biodegradable polymers. For example, the particles may be formed of a functionalized polyester graft copolymer consisting of a linear α-hydroxy-acid polyester backbone having at least one amino acid group incorporated therein and at least one poly(amino acid) side chain extending from an amino acid group in the polyester backbone. In one embodiment, porous particles having a relatively large mean diameter, for example greater than 5 μm, can be used for enhanced delivery of a therapeutic agent to the alveolar region of the lung. The porous particles incorporating a therapeutic agent may be effectively aerosolized for administration to the respiratory tract to permit systemic or local delivery of wide variety of therapeutic agents.